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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David Clarence Howard

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EXAMINER

PRUCHNIC, STANLEY J

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/755,771

Applicant(s)

HOWARD ET AL.

Examiner

Stanley J. Pruchnic, Jr.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2004 and 13 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01/12/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/12/04 and 4/4/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (Claims 1-19) in the reply filed on 13 April 2005 is acknowledged.

The traversal is on the ground(s) that the inventions set out by the claims in Groups I and II clearly are related and that a thorough search and examination of either claim group would be relevant to the examination of the other group. This argument is persuasive. Moreover, upon further consideration, the restriction requirement is not deemed proper because the subcombination (Group I) does not require the particular features as described in the Restriction Requirement.

Therefore, the restriction requirement made in the Office action mailed on 28 March 2005 is hereby withdrawn. All pending Claims 1-20 have been considered.

Specification

2. The disclosure is objected to because of the following informalities:
 - a. On Page 1, in Paragraph [0002], the last line, after "compressor", the word "discahrge" is incorrectly spelled: perhaps it should be deleted and replaced with the word --discharge--.
 - b. On Page 3, in Paragraph [0012], in line 5, after "is spaced", the word "readially" is incorrectly spelled: perhaps it should be deleted and replaced with --radially--.

Appropriate correction is required.

Claim Objections

3. Claims 18, 19 and 20 are objected to because of the following informalities:
 - a. In Claim 18, in Line 3, perhaps insert the word -- **of** -- before the phrase "**said first face**" in order to correct a minor grammatical error.
 - b. In Claim 19, in Line 2, "said seal groove" lacks antecedent basis.
 - c. In Claim 20, in Line 3, perhaps "**an**" before "temperature probe" should be deleted and replaced therefor by the word --**a**-- in order to correct a minor grammatical error.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **ZEISER** (U. S. Patent No. 5,115,636 A) in view of **Hollis et al.** (U. S. Patent No. 4,300,774 A, hereinafter **HOLLIS**).

With respect to **Claims 1-7: ZEISER** discloses or suggests all the limitations as claimed by Applicant in Claims 1-7, including the limitations:

Regarding **Claim 1: ZEISER** discloses or suggests a method of mounting an instrument probe using an adapter post (borescope plug 10), said method comprising:

coupling an attachment end (12A) of the adapter post (10) to a first wall (9) defined between a cavity (Fig. 1, on other side of wall 9 from the plug 10; Col. 1, Lines 10-60) and an annulus (the region including the plug 10);

coupling an opposite sealing end (12B) of the adapter post (10) to a second wall (14) defined between the annulus and an ambient area (adjacent cover plate 76);

sealing the adapter post to compensate (Figs. 1-1A) for a relative movement between the first wall 9 and the second wall 14 such that the sealing is maintained; and

inserting the instrument probe (Col. 1, Lines 23-35) at least partially within the adapter post to monitor a process parameter within the cavity as claimed by Applicant.

ZEISER further discloses that opposing holes are often put in spaced apart walls of gas turbine engines to allow both inspection and monitoring of the engine, by inserting probes (Col. 1, Lines 24-27) through such holes. Moreover, as shown in Fig. 4, ZEISER discloses a duct 220 in one embodiment (Fig. 4). However, the back end 48 of housing 20, as disclosed by ZEISER, does not have an opening for inserting a probe therethrough as claimed by Applicant.

Further regarding **Claim 2**: ZEISER discloses the method wherein coupling an attachment end of the adapter post to a first wall comprises securely coupling the attachment end to the first wall. This is considered met by the spring means 40, which functions to bias the attachment end, ensuring that it is securely coupled to the first wall.

Further regarding **Claim 4**: ZEISER discloses the method wherein coupling a sealing end of the adapter post to a second wall comprises coupling the sealing end to the second wall using a piston-ring (split-ring 50) sealing arrangement (Col. 3, Lines 33-45).

Further regarding **Claims 5-7**: ZEISER discloses the method wherein sealing the adapter post comprises sealing the adapter post between at least one (as claimed by Applicant in Claim 5) of, at least two (as claimed by Applicant in Claim 6), and (regarding Claim 7, all three) of the cavity and annulus, the annulus and the ambient area, and the cavity and the ambient area as claimed by Applicant.

To summarize, ZEISER discloses or suggests all the limitations of Claims 1-7, but does not explicitly disclose inserting an instrument probe as claimed by Applicant in **Claim 1**, and ZEISLER does not disclose the limitations of **claim 3**, wherein coupling an

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attachment end of the adapter post to a first wall comprises threadably coupling the attachment end to a first wall.

Regarding **Claim 1**: HOLLIS discloses that is known in the art to modify a sealing plug for inserting an instrument probe in order to measure temperature in a combustor in a gas turbine engine. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the adapter post of ZEISER to include an opening for inserting a probe therethrough in order to monitor the temperature in the combustor in the gas turbine engine as taught by HOLLIS.

Regarding **Claim 3**: HOLLIS discloses that is known in the art to threadably couple the attachment end of a sealing plug including an inserted temperature measurement probe to a first wall in order to provide a good seal (Col. 3, Lines 4-11) between the combustor and annular space. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the adapter post of ZEISER for threadably coupling the attachment end to a first wall in order to provide a good seal in the first wall between the combustor and annular space as taught by HOLLIS.

7. Claims 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **ZEISER** in view of Shah *et al.* (U. S. Patent No. 4132114 A, hereinafter **SHAH**).

First, with respect to Claims 12-14 and 17-19: **ZEISER** discloses or suggests all the limitations as claimed by Applicant in Claims 12-14 and 17-19, including the limitations:

Regarding **Claim 12**: ZEISER discloses or suggests a mounting assembly for mounting an instrument probe within a cavity, said mounting assembly comprising:

an adapter post (borescope plug 10) comprising an attachment end (12A), a sealing end (12B), and a hollow body (shaft 12, which may include duct 220, as shown in Fig. 4) extending therebetween, said body configured to receive said probe sensor at least partially therein; and

a seal plate (collar 66) comprising an aperture (bore 70) sized to receive said adapter post (10) therethrough.

ZEISER further discloses that opposing holes are often put in spaced apart walls of gas turbine engines to allow both inspection and monitoring of the engine, by inserting probes (Col. 1, Lines 24-27) through such holes. Moreover, as shown in Fig. 4, ZEISER discloses a duct 220 in one embodiment (Fig. 4). However, the back end 48 of housing 20, as disclosed by ZEISER, does not have an opening for inserting a probe therethrough as claimed by Applicant. ZEISER does not disclose an instrument probe comprising a probe head coupled to a probe sensor as claimed by Applicant in Claim 12.

Further regarding **Claim 13**: ZEISER discloses the mounting assembly wherein said attachment end 12A is configured to couple to a first wall 9, said sealing end 12B is configured to couple to a second wall 14 that is spaced (Fig. 1) a distance from the first wall as claimed by Applicant.

Further regarding **Claim 14**: ZEISER discloses coupling the sealing end 12B to the second wall 14, but does not disclose a probe head configured to couple to the second wall as claimed by Applicant in Claim 14.

Further regarding **Claim 17**: ZEISER discloses the mounting assembly wherein said adapter post sealing end 12B further comprises a seal groove (Col. 3, Lines 33-45; which cooperates with split-ring 50).

With respect to Claim 18: ZEISER differs from the claimed invention because he does not show at least one of said first face and said second face comprising a seal groove circumscribing said aperture as claimed by Applicant in Claim 18.

Further regarding **Claim 19**: ZEISER discloses the mounting assembly wherein a seal groove is configured to receive at least a portion of a compression seal ring 50 therein.

To summarize, ZEISER discloses or suggests all the limitations of Claims 12-14 and 17-19, but does not disclose the mounting assembly for mounting an instrument probe within a cavity including the limitation of said mounting assembly including an instrument probe comprising a probe head coupled to a probe sensor as claimed by Applicant in **Claim 12**. Moreover, ZEISER does not disclose the mounting assembly wherein said probe head is configured to couple to the second wall as claimed by Applicant in **Claim 14**. Also, ZEISER differs from the claimed invention because he does not show at least one of said first face and said second face comprising a seal groove circumscribing said aperture as claimed by Applicant in Claim 18.

Regarding the probe head: **SHAH** discloses that it is known in the art of gas turbine instrumentation for a sensor mounting assembly to include an instrument probe comprising a probe head 20 (including a terminal plate) coupled to a probe sensor (comprising tube 28 and associated thermocouple wires; Col. 2, Lines 42ff). Further regarding **Claim 14**: **SHAH** discloses configuring the probe head to couple to the (second) wall (turbine casing 14), which is in the ambient compartment, in order to protect the wires leading from the hot gas and high pressure environment of the gas turbine engine.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the adapter post of ZEISER (as already suggested by ZEISER in order to measure temperature of hot gas in the turbine) to include an opening for inserting a probe therethrough, and to include an instrument probe comprising a probe head, configuring the probe head to couple to the (second) wall in order to protect the wires as taught by **SHAH**.

Further regarding **Claim 18**: ZEISER discloses the mounting assembly wherein said seal plate (collar 66) comprises a body having a first face and a second opposing face (considering opposing sides to be "faces"), but ZEISER discloses a seal groove circumscribing said aperture is in the solid back end 48 of housing 20. **With respect to Claim 18**: ZEISER differs from the claimed invention because he does not show at

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least one of said first face and said second face comprising a seal groove circumscribing said aperture as claimed by Applicant in Claim 18.

Changing the location of the seal groove from the solid back end 48 of housing 20 shown by ZEISER to a location on at least one of said first face and said second face of a seal plate, absent any criticality, is considered an obvious modification of ZEISER 's apparatus that a person having ordinary skill in the art at the time the invention was made would be able to provide using routine experimentation since the courts have held that there is no invention in shifting the position of a structure to a different position if the operation of the device would not be thereby modified. In re Japikse, 86 USPQ 70 (CCPA 1950).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to shift the position of the groove to one of said first face and said second face as long as it fulfilled the purpose of receiving the sealing ring or o-ring as already taught by ZEISER.

Furthermore, with respect to Claims 15-16: ZEISER discloses or suggests all the limitations as claimed by Applicant in Claims 15-16 as described above with respect to Claims 12-14 and 17-19. When modified as described above, the probe sensor comprises an elongate body. But, ZEISER, as described above, does not disclose the mounting assembly including at least one damper configured to slidably engage a radially inner surface of said adapter post as claimed by Applicant in **Claim 15**, and further regarding **Claim 16**, wherein said at least one damper comprises a coil wire helically-wound around at least a portion of the body.

SHAH discloses that it is known in the art of gas turbine instrumentation for a sensor mounting assembly to include at least one damper (coil spring 50) configured to slidably engage a radially inner surface of said adapter post, wherein said at least one damper comprises a coil wire helically-wound around at least a portion of the body 28. This arrangement prevents the probe body 28 from moving far enough to damage the wires while allowing some axial movement.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the adapter post of ZEISER to include at least one damper (coil spring 50) configured to slidably engage a radially inner surface of said adapter post, wherein said at least one damper comprises a coil wire helically-wound around at least a portion of the body in order to protect the wires from breaking as taught by **SHAH**.

8. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **ZEISER** in view of **HOLLIS** and further in view of *Deak et al.* (U. S. Patent No. 5,662,418 A, hereinafter **DEAK**).

ZEISER in view of **HOLLIS** disclose or suggest all the limitations of Claims 8-10 as described above in Paragraph 6 with regard to Claims 1-7. **ZEISER** in view of **HOLLIS** further discloses coupling the instrument probe at least partially within the adapter post, but **ZEISER** and **HOLLIS** do not disclose sealingly coupling the instrument probe at least partially within the adapter post as claimed by Applicant in Claim 8. **ZEISER** and **HOLLIS** do not disclose sealingly coupling the instrument probe to the second wall as claimed by Applicant in Claim 9, and using a "compression-ring" sealing arrangement as claimed by Applicant in Claim 10.

DEAK discloses that it is known in the art of gas turbine instrumentation for a sensor mounting assembly to include sealingly coupling the instrument tube 11 at least partially within a flange 27 attached to an outer wall. **DEAK** discloses using a circumferential annular groove 18 in the probe to accommodate sealing rings 28, considered "Compression-rings" as claimed by Applicant, since they will compress in normal use.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the adapter post of **ZEISER** to include at least one "compression-ring" sealing arrangement as taught by **DEAK** for sealingly coupling the instrument probe at least partially within the adapter post, and sealingly coupling the instrument probe to the second wall, to which the post is attached in order to prevent high pressure gas from ejecting the probe tube out of the opening in the adapter post, which could damage the sensor, and allow hot gas to escape the engine, causing damage to adjacent components, as well as loss of efficiency of the engine.

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9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **ZEISER** in view of **HOLLIS** and further in view of **SHAH**.

ZEISER in view of **HOLLIS** disclose or suggest all the limitations of Claim 11 as described above in Paragraph 6 with regard to Claims 1-7. **ZEISER** in view of **HOLLIS** further discloses or suggests inserting the instrument probe at least partially within the adapter post comprises slidably inserting the instrument probe at least partially within the adapter post to facilitate reducing radial motion of the instrument probe within the adapter post as claimed by Applicant.

ZEISER further discloses a damper (spring means 40), but this is not part of an instrument probe. It is for pressing on shaft 12 of the borescope plug. **HOLLIS** also discloses a damper (compressible spring means 30), but this is not part of the instrument probe 40.

ZEISER and **HOLLIS** does not disclose the limitations of **claim 11** wherein the instrument probe includes a damper as claimed by Applicant.

SHAH discloses that it is known in the art of gas turbine instrumentation for a sensor mounting assembly to include at least one damper (coil spring 50) configured so that inserting the instrument probe at least partially within the adapter post comprises slidably inserting the instrument probe at least partially within the adapter post to facilitate reducing radial motion of the instrument probe within the adapter post.

SHAH discloses that it is known in the art of gas turbine instrumentation for an instrument probe to include a damper, so that when the probe body 28 is slidably inserted, the damper arrangement prevents the probe body 28 from moving far enough to damage the wires while allowing some axial movement.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the adapter post of **ZEISER** to include at least one damper (coil spring 50) configured to prevent excessive axial movement in order to protect the wires from breaking as taught by **SHAH**.

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10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over **ZEISER** in view of **SHAH**.

Regarding Claim 20: ZEISER discloses or suggests a mounting assembly for mounting a temperature probe to a gas turbine engine (Col. 1, Lines 10-46), said temperature probe mounting assembly comprising:

a[[n]] temperature probe;

an adapter post 10 comprising an attachment end 12A configured to couple to the gas turbine engine, a sealing end 12B comprising a circumferential seal groove (Fig. 1; Col. 3, Lines 35-39) configured to receive a seal ring (50) partially therein to facilitate sealing contact between said sealing end 12B and a wall (76), and a hollow body (220; See Fig. 4) extending between said sealing end 12B and said seal ring 50 (o-ring 300 in Fig. 4), said body sized to receive at least a portion of said probe sensor therein; and

a seal plate (14) comprising an aperture (bore 70) sized to receive said adapter post (10) therethrough, a first face, and an opposing second face, at least one -of- said first face and said second face comprises a circumferential seal groove circumscribing said aperture, said seal groove sized to receive at least a portion of a seal ring (collar 66) therein.

ZEISER further discloses that opposing holes are often put in spaced apart walls of gas turbine engines to allow both inspection and monitoring of the engine, by inserting probes (Col. 1, Lines 24-27) through such holes. Moreover, as shown in Fig. 4, ZEISER discloses a duct 220 in one embodiment (Fig. 4). However, the back end 48 of housing 20, as disclosed by ZEISER, does not have an opening required for mounting a temperature probe as claimed by Applicant.

To summarize, ZEISLER discloses or suggests a mounting assembly for mounting a temperature probe to a gas turbine engine including all the limitations as claimed by Applicant in Claim 20, except that ZEISER does not disclose said temperature probe comprising a probe head coupled to a probe sensor extending from

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said probe head, said probe sensor comprising an elongate body and a damper coil wire helically-wound around at least a portion of said body as claimed by Applicant.

Regarding **the probe head**: **SHAH** discloses that it is known in the art of gas turbine instrumentation for a sensor mounting assembly to include an instrument probe comprising a probe head 20 (including a terminal plate) coupled to a probe sensor (comprising tube 28 and associated thermocouple wires; Col. 2, Lines 42ff). Further regarding **Claim 14**: **SHAH** discloses configuring the probe head to couple to the (second) wall (turbine casing 14), which is in the ambient compartment, in order to protect the wires leading from the hot gas and high pressure environment of the gas turbine engine.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the adapter post of ZEISER (as already suggested by ZEISER in order to measure temperature of hot gas in the turbine) to include an opening for inserting a probe therethrough, and to include an instrument probe comprising a probe head, configuring the probe head to couple to the (second) wall in order to protect the wires as taught by **SHAH**.

SHAH discloses that it is known in the art of gas turbine instrumentation for a sensor mounting assembly to include at least one damper (coil spring 50) configured so that inserting the instrument probe at least partially within the adapter post comprises slidably inserting the instrument probe at least partially within the adapter post to facilitate reducing radial motion of the instrument probe within the adapter post.

SHAH discloses that it is known in the art of gas turbine instrumentation for an instrument probe to include a damper, so that when the probe body 28 is slidably inserted, the damper arrangement prevents the probe body 28 from moving far enough to damage the wires while allowing some axial movement.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the adapter post of ZEISER to include at least one damper (coil spring 50), helically-wound around at least a portion of said

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body as shown by SHAH, to prevent excessive axial movement in order to protect the wires from breaking as taught by **SHAH**.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in a form PTO-892 and not mentioned above disclose related temperature measurement methods and structures for mounting and sealing in gas turbine engines.

- US 2838935 A (DI CECIO SALVATORE A et al.) and US 3167733 A (DI NOIA EMANUEL J) disclose temperature monitoring devices including seals and springs for damping axial movements of the probes.
- US 3362160 A (BOURGEOIS HECTOR S), US 4815276 A (Hansel; Harold R. et al.) and US 5431534 A (Charbonnel; Jean-Louis) disclose related borescope hole plugs for gas turbine engines.
- US 5185996 A (Smith; Alan A. et al.) and US 5366290 A (Mayer; Christopher R. et al.) disclose related temperature sensors with seals installed for measuring temperature in gas turbine engines.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stanley J. Pruchnic, Jr., whose telephone number is **(571) 272-2248**. The examiner can normally be reached on weekdays (Monday through Friday), the best hours being from 7:30 AM to 4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez (Art Unit 2859) can be reached at **(571) 272-2245**. The *Official FAX* number for Technology Center 2800 is (703) 872-9306 for all official communications.

Any inquiry of a general nature or relating to the status of this application or proceeding may be directed to the official USPTO website at www.uspto.gov or you may call the **USPTO Call Center** at **800-786-9199** or 703-308-4357. The Technology Center 2800 Customer Service FAX phone number is (703) 872-9317.

The cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site, from the Office of Public Records and from commercial sources.

Private PAIR provides external customers Internet-based access to patent application status and history information as well as the ability to view the scanned images of each customer's own application file folder(s).

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For inquiries relating to Patent e-business products and service applications, you may call the **Patent Electronic Business Center (EBC)** at 703-305-3028 or toll free at 866-217-9197 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. Additional information is available on the Patent EBC Web site at: <http://www.uspto.gov/ebc/index.html>.

SG

Stanley J. Pruchnic, Jr.
7/21/05


GAIL VERBITSKY
PRIMARY EXAMINER